

Claims

1. Process for continuously producing, inspecting and packing finished drawn metal parts in containers identified by the tool from which they were produced, comprising the steps of:

- providing a plurality of identified drawing press tools;
- supplying each one of the plurality of identified drawing press tools with a supply of metal blanks;
- drawing the metal blanks in the plurality of identified drawing press tools to provide a plurality of segregated streams of drawn metal parts, each stream being associated with one of said identified drawing press tools;
- merging the segregated streams into a single ordered stream of drawn metal parts having a repeating sequential order enabling identification of the drawing press tool in which the drawn metal part was drawn;
- removing a drawn metal part from the ordered stream;
- inspecting the removed part to see if it is defective;
- providing a plurality of containers corresponding to said plurality of identified drawing press tools; and
- packing the finished drawn metal parts from the ordered stream into the containers respectively corresponding to the identified drawing press tools.

2. The process according to Claim 1 including the step of ceasing operation of a selected identified drawing press tool that produced said removed part if the part is defective, while continuing to operate the remainder of the non-selected ones of the plurality of identified drawing press tools.

3. The process according to Claim 1, including the step of removing the drawn metal parts produced by a selected drawing press tool by ejecting the drawn metal parts from the ordered stream that have the same number in said repeating sequential order, while maintaining the gaps in the ordered stream corresponding to the previous locations of the ejected drawn metal parts.

4. The process according to Claim 1, wherein said merging step comprises providing a plurality of feed wheels arranged to receive the parts from respective ones of said segregated streams, providing a merge wheel coupled to said feed wheels and arranged to receive drawn metal parts from each of the feed wheels in turn, said merge wheel being arranged to discharge drawn metal parts in an ordered stream having said repeating sequential order.

5. Process for continuously producing, inspecting and packing finished drawn metal parts in containers identified by the tool from which they were produced, comprising the steps of:

- providing a source of initially drawn metal cups;

- providing a plurality of identified drawing press tools;

- supplying each one of the plurality of identified drawing press tools with a supply of metal cups from said source;

- drawing the metal cups in the plurality of identified drawing press tools to provide a plurality of segregated streams of drawn metal parts, each said stream being associated with one of said identified drawing press tools;

- merging said segregated streams into a single ordered stream of drawn metal parts having a repeating sequential order, said repeating sequential order enabling identification of the drawing press tool in which the drawn metal part was drawn by the location of the metal part in said ordered stream;

- providing a conveyor having a segregated pocket for each of said drawn metal parts;

- inserting the drawn metal parts into the segregated conveyor pockets in said repeating sequential order;

- removing a drawn metal part from one of said conveyor pockets in the ordered stream;

- automatically inspecting said removed part to see if it is defective;

- identifying the drawing press tool by identifying the pocket on said conveyor from which the drawn metal part was removed;

- performing additional manufacturing steps on the ordered stream to provide finished drawn metal parts, while maintaining empty pockets on the conveyor corresponding to the locations where drawn metal parts are removed;

providing a plurality of containers corresponding to said plurality of identified drawing press tools;

and packing the finished drawn metal parts from the ordered stream into said containers respectively corresponding to said identified drawing press tools.

6. The process according to Claim 5 including the step of ceasing operation of a selected identified drawing press tool that produced said removed part if the part is defective, while continuing to operate the remainder of the non-selected ones of the plurality of identified drawing press tools.

7. The process according to Claim 5, including the step of removing the drawn metal parts produced by a selected drawing press tool by ejecting the drawn metal parts from the ordered stream that have the same number in said repeating sequential order, while maintaining the empty pockets on the conveyor corresponding to the previous locations of the ejected drawn metal parts.

8. The process according to Claim 5, wherein said merging step comprises providing a plurality of feed wheels arranged to receive the parts from respective ones of said segregated streams, providing a merge wheel coupled to said feed wheels and arranged to receive drawn metal parts from each of the feed wheels in turn, said merge wheel being arranged to discharge drawn metal parts in an ordered stream having said repeating sequential order.